

# MANIPUR INTERNATIONAL UNIVERSITY

## **Pre Ph D course or Ph D Coursework Structure and Syllabus**

### **Applicable for All Academic Disciplines and Interdisciplinary Studies**

The Manipur International University is offering Ph.D programme in various disciplines of the Faculty of Arts, Science and Technology, Commerce and Management, Law and Interdisciplinary studies as per UGC guidelines. The **Pre PhD course** is compulsory for all scholars enrolled for Ph D program, except for those who have cleared M Phil course. It will normally be of 1 year spread over two semesters, each semester will have 3 papers.

#### **Course Design**

**Aim:** To equip the students with advanced skills of Learning and Enquiry, Data collection and Analysis, writing research reports and scholarly papers.

**Content:** Advanced research methods for discipline specific and also for multidisciplinary studies; writing thesis and scholarly papers.

**Duration:** One year

**Evaluation:** Semester wise examination Marks/ Credits, Work-in-progress seminars, dissertation, papers in each semester. The coursework will have a total of 6 papers each of 100 marks or a total of 600 marks, in Credit mode a total of 30 credits. All are required to pass this 'Course work', the pass mark will be 60% of the total marks. The 600 marks will be distributed as follows:

#### **Semester wise course layout:**

Course Title: Ph D Coursework / Pre Ph D Course

<b>Semester 1</b>	Course Code: PPHD 001: (Paper I Paper II Paper III)	Marks
Paper I	Research Methodology Research and Publication Ethics (RPE)	100
Paper II	Data collection and analysis. Statistics and Computer Applications in research. Data entry and Analysis. Literature Review, Review Paper writing; 1 seminar, 1 review Paper	100
Paper III	Subject specific compulsory course/ Basics of the Subject – Review and Discussions on Subject specific topics based on UGC NET Syllabus - 2 seminars	100
	<b>Total (PPHD 001)</b>	<b>300</b>
<b>Semester 2</b>	Course Code: PPHD 002: (Paper IV Paper V Paper VI)	
Paper IV	Subject specific elective courses	100
Paper V	Research theme specific course, Research Methods specific to research theme. Research plan formulation and presentation. 2 Seminar/Webinars, 1 Paper	100
Paper VI	Data Analysis and Reporting; Analytical/Statistical Computer softwares (SPSS, MINITAB, MATLAB) and applications. Report writing, Thesis writing;1 Seminar/Webinar, 1 Paper/Dissertation	100
	<b>Total (PPHD 002)</b>	<b>300</b>
	<b>Total for the coursework</b>	<b>600</b>

## **Syllabus Pre Ph D Course**

Course Title: Pre Ph D Course

Course Code: PPHD 001: Paper I Paper II Paper III

PPHD 002: Paper IV Paper V Paper VI

The scholars completing the Pre-registration Credit Course Papers shall be considered eligible to start the practical research work on the approved topic in the subject. No Research Scholar will be allowed to submit Thesis without clearing the coursework as per UGC guidelines.

### **Overview:**

The detailed core curriculum for this course is designed to introduce research methodology, research misconduct and predatory publications as well as indexing, research matrices and plagiarism tools. This Pre-registration Credit Course for Ph. D. program has 3 papers in each of the 2 semesters, focused on basic aspects of research philosophy, ethics, integrity and publication ethics.

### **Course objectives:**

1. To impart knowledge and skills in developing and conducting academic and applied research, evaluate research plans, good practices in research, due reporting; writing thesis and scholarly papers.
2. To coach the students to have a clear understanding of the concerned subject, raise questions, critically review and analyze, and apply the findings to do quality research.
3. To inculcate originality in Research and Reporting, maintain Research ethics, Intellectual honesty, Research integrity and avoid Research and Publication misconduct whatsoever.

### **Learning objectives:**

The course will help to ensure that the scholars are able to:

- a) Gain knowledge of research in the concerned disciplines (Science, Social Science, Humanities, Commerce and Management, Law and Interdisciplinary studies) as applicable.
- b) Identify and discuss the role and importance of research, the issues and concepts salient to the 8 steps of research process,
- c) Identify Research questions/ problems, understand the complex issues inherent in selecting a research problem and select an appropriate research design
- d) Identify and describe the concepts and procedures of sampling, data collection, critically analyze and interpret the results of data and predict outcomes.
- e) Gain knowledge to do reporting, write and publish Scholarly paper and Thesis. .
- f) Acquire a deeper understanding of the subject concerned, ask questions and develop or improve theories and norms.
- g) Explain and Evaluate the limits and possibilities of a research concept and its implementation.
- h) Understand the Ethics in Research and Publication and apply the tools to check Publication misconduct.
- i) Gain knowledge on Patent laws, process of patenting a research finding, copyright etc

### **Learning outcomes:**

The scholars will be able to:

1. Analyse and explain key research concepts and issues.
2. Read, comprehend, and explain research articles in their academic disciplines
3. Apply and demonstrate methods of research within the philosophy of the disciplines
4. Demonstrate and Apply research processes to implement research projects and give scientific explanations.
5. Develop a realistic Research design and Research plan
6. Acquire the skills to write thesis and academic papers and present in Seminars and Webinars

7. Acquire various skills to put forth and explain the problems concerning new research concepts, presenting arguments and defending.
8. Acquire a sound understanding of the Subject and ask questions in the developed norms and suggest improvements
9. Apply tools to check and avoid any misconduct in publication.
10. Understand Copyright and Patent laws, Acquire skills to process for the patenting of a research finding.
11. Improve the teaching learning process with the help of research.

**Pedagogy:** The teaching methods will be Lectures and discussion sessions through online/offline mode.

**Mode of instruction:** The medium of instruction for the Coursework shall be English in case of Faculty of Science and Technology and Faculty of Humanities (Law), Faculty of Commerce and Management, Faculty of Humanities and Faculty of Interdisciplinary studies. The medium of instruction will be Hindi for Indian Languages other than Manipuri and Manipuri Language in case of Faculty of Arts (Performing Arts and Fine Arts) and languages of Manipur state.

**Examination:** The examination will be conducted at the end of the semester course through online mode. The pattern of examination shall be Multiple Choice Question (MCQ) 50% and 50% others out of 100 marks of each paper.

**Details of curriculum:**

Semester 1	Course Code: PPHD 001: Paper I Paper II Paper III	Marks
Paper I	<b>Research Methodology, Research and Publication Ethics (RPE)</b>	<b>100</b>
Paper I	Research Methodology - 3 Credit Course Research and Publication Ethics (RPE) - 2 Credit Course	
	Title - Topics to be covered	
Unit I	<b>Basics of Research and Research process</b> Research: Meaning, characteristics, types, importance. Defining research problem. Research objectives, Scientific research, Importance of research methodology, Good Research Practices (GRP) Research process – characteristics and requirements. The 8 Steps Model of Research process	
Unit II	<b>Research design:</b> Identification and Formulation of problem, Hypothesis, Differences between theory, principle, law, hypothesis, postulate, proposition. Empirical basis of hypothesis formulation. Types of errors in formulation of hypothesis. Making of a Research design on a specific problem related to Survey, Field, Documentary studies and content analysis as applicable.	
Unit III	<b>Research Methods &amp; Good Lab practices</b> - Types, surveys, case studies, experiments and field studies etc. Problems of measurement, reliability and validity. Faculty/subject specific norms, ethics and good practices in research. Problems of Subjectivity in Social Science Research and remedies. Ethical consideration in research on human beings. Good laboratory practices: Ethics in Science Research; Management and user responsibilities in proper utilization of the facilities; Recording and storage of recorded	

	materials; Maintenance of equipments; Safety measures in field studies and Lab work; Proper storage and disposal of hazardous materials (chemical & biological). The Guidelines of CPCSEA - Committee for the Purpose of Control and Supervision of Experiments on Animals.	
Unit IV	<p><b>Research and Publication Ethics (RPE) - 2 Credit Course</b></p> <p><b>Research ethics and scientific conduct:</b></p> <p>Philosophy and ethics (03 hours): Introduction to philosophy and ethics, research philosophy and concept of research ethics, moral philosophy, nature of moral judgements and reactions.</p> <p>Scientific conducts 05 hrs: Ethical aspects in science/ social science research, Intellectual honesty, Research integrity. Scientific misconducts (Falsification, Fabrication, Plagiarism), Redundant publications (Duplicate, Overlapping and Salami slicing), Selective reporting and misrepresentation of data.</p>	
Unit V	<p><b>Publication Ethics</b></p> <p>Concept of publication ethics and its significance, Best practices and guidelines (COPE, WAME, etc.), Conflict of interest, Publication misconduct: Concept, problems and types Violation of publication ethics, authorship and contributorship Identification of publication misconduct, complaints and appeals Predatory and open access publication. Predatory publishers and journals</p> <p><b>Open access publication</b></p> <p>Open access movement publications and initiatives, SHERPA/RoMEO tools to check copyright and self-archiving policies, Journal finder/Journal suggestion tools (JANE, EJF,SJS),</p> <p><b>Publication misconduct</b></p> <p>Group discussion on publication misconduct. Quality parameters and practices; Subject specific ethical issues; FFP Authorship; Conflict of interest; Complaints and appeal from India and Abroad</p> <p><b>Database and research metrics</b></p> <p>Databases : Indexing databases Citation databases, Web of Science, Scopus etc. Copy Rights and Intellectual Property Rights (IPR), Plagiarism Check: Software tools (TURNITIN, URKUND, etc.) practice. Databases (Indexing, Citation) and</p> <p>Research Metrics : Impact factor of journal as per journal citation Report Impact factor, SNIP, SJR, IPP, Cite Score.. Metrics ,: h-index, g-index, i-10 index,, altmetrics.</p>	
Paper II	<p><b>Data collection and analysis. - 2 Credit Course</b></p> <p><b>Statistics and Computer Applications in research. Data entry and Analysis. - 2 Credit Course</b></p> <p><b>Literature Review, Review Paper writing; 1 seminar, 1 review Paper - 1 Credit Course</b></p>	100
Unit I	<p><b>Statistics in Research</b></p> <p>Introduction to statistics and statistical methods; Statistical analysis and report writing: - Measures of central tendency, dispersion and Association/Relationship, Variance, Regression and Correlation analysis, Hypothesis testing and Test of significance. t-test, F-test, Z-test, correlation, regression, goodness of fit test, ANOVA, dispersion. Analytical techniques, Spectral techniques, Purification techniques, Synthetic</p>	

	<p>methodologies.</p> <p><b>Data collection and analysis:</b> - Tools of research, Primary and secondary data, Methods and Techniques of data collection, qualitative and quantitative data, sampling and sampling techniques, Data analysis and interpretation, Graphical representation of data, Error analysis.</p>	
Unit II	<p><b>Computer applications in research: -</b></p> <p>Fundamentals of computers - definition, types of computers. RAM, ROM, CPU, I/O devices.</p> <p>Internet and the World Wide Web as sources of research materials, misuse of internet, viruses, hacking, Fieldhazards</p> <p>Operating systems &amp; computing languages: Operating system - definition, types of OS. Use of software - MSOffice – MS WORD, Word Perfect, Power Point and MS EXCEL. Compatibility with Windows, Linux. C language, Matlab, Mathematica, Tecplot, Gnuplot, Xfig.</p> <p>Practical Data Entry and Analysis using MS Excel and Testing of a sample hypothesis, t-test, F-test, Z-test, correlation, regression, goodness of fit test, ANOVA, dispersion. Analytical techniques, Spectral techniques, Purification techniques, Synthetic methodologies.</p> <p>Handling of Software tools - TURNITIN, URKUND, etc.</p>	
Unit III	<p><b>Literature Review</b></p> <p>Review of concerned Literature and Research works, Basic Concept and its need, literature search, types of literature review, review of research works, sources, synthesis process, planning of review and documentation, Concepts of Bibliography and References. A review paper, One Seminar/Webinar.</p>	
<b>Paper III</b>	<p><b>Subject specific compulsory course - Basics of the Subject – Review and Discussions on Subject specific topics based on UGC NET Syllabus, - 4 Credit Course; 2 seminars - 1 Credit Course</b></p>	<b>100</b>
Unit I	<p><b>Subject specific compulsory course - Basics of the Subject – Review and Discussions on Subject specific topics based on UGC NET Syllabus, - 4 Credit Course</b></p>	
Unit II	<p>Synopsis writing, 2 seminars - 1 Credit Course</p>	
<b>Semester 2</b>	<p><b>Course Code: PPHD 002: Paper IV Paper V Paper VI</b></p>	<b>300</b>
<b>Paper IV</b>	<p><b>Subject specific elective courses - Credit Course</b></p>	<b>100</b>
Paper IV	<p>Subject specific elective courses - 4 Credit Course</p>	
	<p>Patent laws, process of patenting a research finding, copyright, cyber laws;</p> <p>Review of 50 research papers, 2 Seminars, 1 paper, - 1 Credit Course</p>	
<b>Paper V</b>	<p><b>Research theme specific course, Research Methods specific to research theme. - 3 Credit Course</b></p> <p><b>Research plan formulation and presentation. 2 Seminar/Webinar, 1 Paper - 2 Credit Course</b></p>	<b>100</b>
Paper V	<p><b>Research theme specific course and Research Plan:</b></p> <p>Research theme specific course as formulated by RAC,</p>	

	<p>Research Methods specific to research theme.</p> <p><b>Research Plan:</b></p> <p>Research plan formulation/ preparation, Presentation and Defense. 2 seminars, 1 Paper.</p> <p>The research scholar has to prepare a Research Plan Proposal write up in detail based on the theme of his/her research work; and present the same before the concerned RAC and FRC of the University. The evaluation shall be done by the concerned RAC of the research scholar.</p>	
<b>Paper VI</b>	<p><b>Data Analysis and Reporting; Analytical/Statistical Computer softwares (SPSS, MINITAB, MATLAB) and applications - 1 Credit Course</b></p> <p><b>Report writing, Thesis writing, - 3 Credit Course</b></p> <p><b>1 Seminar/Webinar, 1 Paper/Dissertation - 1 Credit Course</b></p>	<b>100</b>
Paper VI	<p><b>Data Analysis and Reporting;</b></p> <p>Introduction to Specialized Computer applications - Software Manuals of Analytical/ Statistical softwares (SPSS, MINITAB, MATLAB);</p> <p>Data analysis and interpretation:</p> <p>Editing, Coding, Transcription, Tabulation etc</p> <p>Practical Application of Analytical/Statistical softwares (Choose one as applicable) (SPSS, MINITAB, MATLAB) and presentation of data (Graphical) -</p> <p><b>Reporting:</b> Types of Research reports, Methods of presentation of report</p>	
	<p><b>Scholarly article and thesis writing:</b></p> <p>Technical aspects of scholarly article and thesis writing; organization of materials, style, drawing figures, graphs, tables, footnotes, references, etc.</p> <p>2 seminars, 1 Paper : Write a report or dissertation as applicable.</p> <p>Paper presentation: One Seminar/Webinar paper preparation (oral or poster) which includes text, figures, pictures, tables, references, etc., question and answer session.</p>	
	<b>Total (2)</b>	<b>300</b>
	<b>Total for the coursework</b>	<b>600</b>

Recommended books:

1. Kothari, C.R. (2014) Research Methodology: Methods and Techniques, New Age International Publishers, New Delhi.
2. Ahuja, Ram (2019) Research Methods, Publisher: Rawat Publications, Jaipur
3. Kambadur, M., Ghosh, A. and Singhvi A. K. (2019) Ethics in Science Education, Research and Governance, Indian National Science Academy, New Delhi (ISBN: 978-81-939482-1-7)
4. National Academy of Sciences, National Academy of Engineering and Institute of Medicine (2009), On Being a Scientist: A Guide to Responsible Conduct in Research, 3rd edn., National Academies Press.
5. Beall, J. (2012) Predatory Publishers Corrupting Open Access, Nature, 489(7415):179.
6. Software Manuals SPSS, MINITAB, MATLAB

7. Blum, Deborah and Mary Knudson, eds. A field guide for science writers: the official guide of the National Association of Science Writers, New York: Oxford University Press, 1997
8. Bajpai, PK. Biological Instrumentation and Methodology. New Delhi: S. Chand & Co. Ltd. 2006
9. Fuscaldo, AA, Erlick, BI, Hindman, B. Laboratory Safety: Theory and Practice. New York: Academic Press, 1980.
10. Ethics in Research Practice and Innovation, Antonio Sandu, Ana Frunza and Elena Unguru, IGI Global.
11. An Introduction to Programming and Numerical Methods in MATLAB: S.R. Otto and J.P. Denier,